

SOFTWARE AND DATA PROCESSING SYSTEM WITH PRIORITY QUEUE DISPATCHING

Abstract of the Disclosure

5 A dispatcher in a multiprogramming or multitasking operating system
in a data processing system selects the next task to be executed by an
available processor. Access to shared resources are controlled by locks and
queues, where tasks are queued when they find the shared resource locked,
and dequeued one by one as the lock is unlocked. When a lock is unlocked,
10 the first task in a FIFO queue is dispatched with a temporary priority at least
as high as any in the queue. This first task must retain this temporary
urgency until it releases the resource or until its urgency is further increased
due to the addition of a higher priority task to the resource queue or a
dependent resource queue. This prevents starvation of higher priority tasks
waiting in the FIFO queue.